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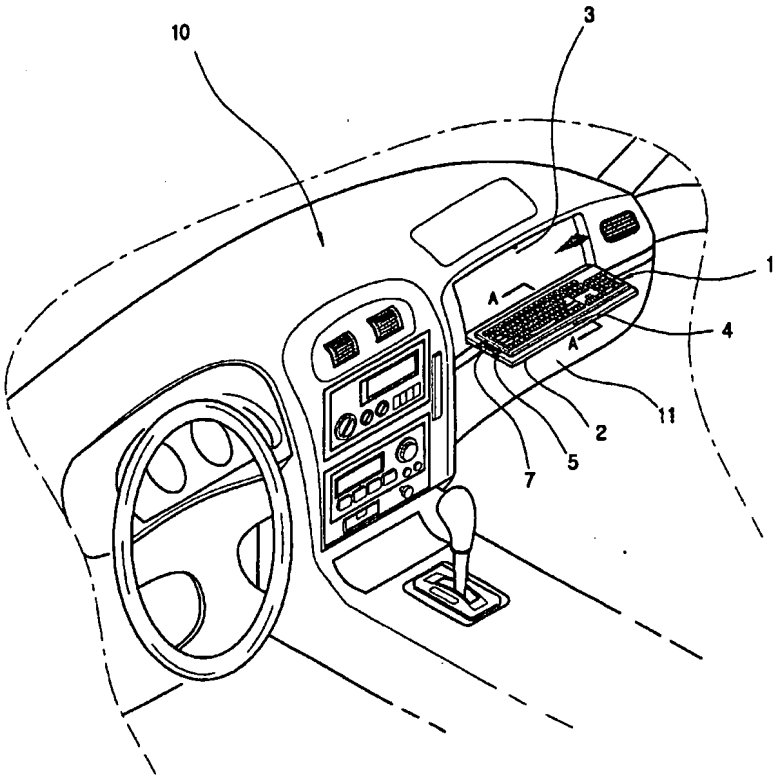
(54) Title: KEYBOARD MOUNTING STRUCTURE FOR AUTOMOTIVE VEHICLE



(57) Abstract: A keyboard mounting structure for an automotive vehicle including a race formed on a given space of a dash panel (10) near a driver assistant seat for housing a keyboard (1); a keyboard housed in the race (3) and laterally unfolded when a cover plate (2) is opened; and a keyboard moving means selectively sliding the keyboard (1) to a driver seat, and including guide rails with guide grooves (5) transversely provided to the cover plate's (2) upper portion; and guide projections (6) formed on the keyboard's bottom to mate with the guide grooves (5).

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KEYBOARD MOUNTING STRUCTURE FOR AUTOMOTIVE VEHICLE

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a keyboard mounting structure for an automotive vehicle. More particularly, it relates to a keyboard mounting structure for an automotive vehicle which houses a keyboard of a computer in a race formed on a dash panel, and allows the keyboard to be folded up for storage and unfolded when a user wants to work on the computer thus maximally facilitating keyboarding and utilizing the keyboard installation space, and enhancing the driving safety.

Discussion of Related Art

Automotive vehicles have been very important in these modern days, and the car accessories installed for convenience are regarded as important as well as technical particulars such as driving safety, riding comfortableness, etc. Computers have been frequently used outdoors, and when trying to work on the computer in the car, desk-top personal computers cannot be installed in the car, and notebook computers are generally used in the car. New techniques such as

mounting a computer monitor on the car interior's dash panel or center fascia have been proposed, and there are difficulties installing a computer keyboard in the car because of restrictions on the car interior's space.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a keyboard mounting structure for an automotive vehicle that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

An object of the present invention is to provide a keyboard mounting structure for an automotive vehicle which houses a keyboard of a computer in a dash panel's given position, and allows the keyboard to be folded up for storage and unfolded when a driver or a driver assistant wants to work on the computer, thus maximally facilitating keyboarding and utilizing the keyboard installation space, and enhancing the driving safety.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, the present invention provides a keyboard mounting structure for an automotive vehicle, including a race formed on a given space of a dash panel near a driver assistant seat for housing a keyboard; a keyboard housed in the race and laterally unfolded when a cover plate is opened; and a keyboard moving means selectively sliding the keyboard to a driver seat, and including guide rails with guide grooves transversely provided to the cover plate's upper portion; and guide projections formed on the keyboard's bottom to mate with the guide grooves.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE ATTACHED DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the drawings:

In the drawings:

FIG. 1 is a perspective view of a dash panel in front of an automotive vehicle's interior in which a keyboard is housed in accordance with the present invention;

FIG. 2 is a perspective view of the keyboard pulled to the outside and laterally unfolded for use in accordance with a first preferred embodiment of the present invention;

FIG. 3 is a perspective view of the keyboard being moved to a driver seat; and

FIG. 4 is a sectional view as taken along line A - A of FIG. 2.

ETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

FIG. 1 depicts a dash panel in front of the car interior in which a computer keyboard is housed, and FIG. 2 is a perspective view of the keyboard unfolded laterally for use. As shown in FIGS. 1 and 2, the keyboard mounting structure is provided to a portion adjacent to a glow box 11 of a dash panel 10 positioned in front of a driver assistant seat, and a keyboard 1 is attached to a cover plate 2 opened laterally and closed vertically. A race 3 is formed to a

depth equal to the thickness of keyboard 1 and cover plate 2, and cover plate 2 with keyboard 1 is joined by a hinge at its lower section to be opened laterally and closed vertically. Cover plate 2's surface is flushed with dash panel 10's outer surface when cover plate 2 is inserted into race 3 and closed. A locking member 4 is provided to cover plate 2, and is preferably a hook or magnet. Keyboard 1 is mounted on dash panel 10 electrically connected to a personal computer and a monitor (not shown). Keyboard 1 is also pulled to a driver seat and moved to a given position for use.

In a means for moving keyboard 1 to a given position, guide rails 5 are of groove shape are formed along keyboard 1 on cover plate 2's upper surface (refers to the inside of cover plate 2). Guide projections 6 are provided to keyboard 1's bottom to mate with guide rails 5 for sliding of keyboard 1. It is preferable that a handle 7 is provided to keyboard 10's one end to make it easier to pull keyboard 1.

The use of the keyboard mounting structure of the present invention is described referring to the drawings.

As shown in FIGS. 1 to 4, in case that a driver tries to use computer keyboard 1 to get some information from the computer (not shown) during driving, as he or she pulls it to the outside simultaneously with releasing locking member 4 of cover plate 2, keyboard 1 attached to cover plate 2 is unfolded laterally from race 3 of dash panel 10, and he or she can work on

computer keyboard 1. When moving keyboard 1 to the driver seat, keyboard 1 on cover plate 2 is drawn to the driver seat. Guide projections 6, integrally formed on keyboard 1's bottom, slide along guide rails 5 to move keyboard to a given position.

Once keyboard 1 is moved to a given position, the user can keyboard, and after keyboarding, he or she pushes keyboard 1 to return it to its original position, and pushes cover plate 2 upward for closing so that keyboard 1 is inserted in race 3 of dash panel 10 to keep cover plate 2's surface flushed with dash panel's outer surface.

When a driver assistant tries to use keyboard 1, all he or she has to do is to open cover plate 2 without moving keyboard 1 to a certain position. If making the moving distance of keyboard 1 longer, an extra sliding plate (not shown) is provided to keyboard 1's bottom for two-stage sliding movement. In this case, keyboard 1 becomes more adjacent to the driver, thus making it easier to work on the computer keyboard.

Keyboard 1 is easily removed from cover plate 2 and freely moved within a given range in the car, which is in the scope of the present invention.

As described above, in the present invention, the dash panel's one space is used to form a race, and the computer keyboard is installed in this groove, thus maximally utilizing the keyboard installation space. If a user does not work on the keyboard, it is not protruded to the outside and housed in the dash

panel, thereby improving the driving safety and making the outer appearance of the car interior better.

It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A keyboard mounting structure for an automotive vehicle comprising:

a race formed on a given space of a dash panel near a driver assistant seat for housing a keyboard;

a keyboard housed in the race and laterally unfolded when a cover plate is opened; and

a keyboard moving means selectively sliding the keyboard to a driver seat.

2. A keyboard mounting structure according to claim 1, wherein the keyboard moving means includes:

guide rails with guide grooves transversely provided to the cover plate's upper portion; and

guide projections formed on the keyboard's bottom to mate with the guide grooves.

FIG. 1

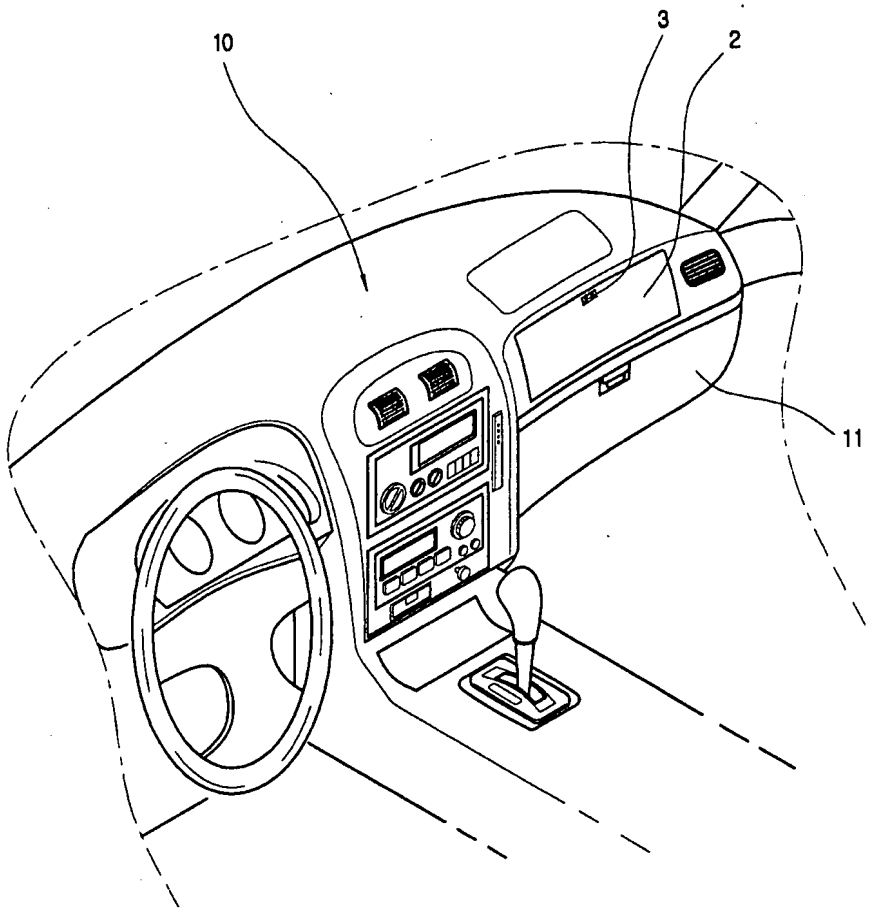


FIG. 2

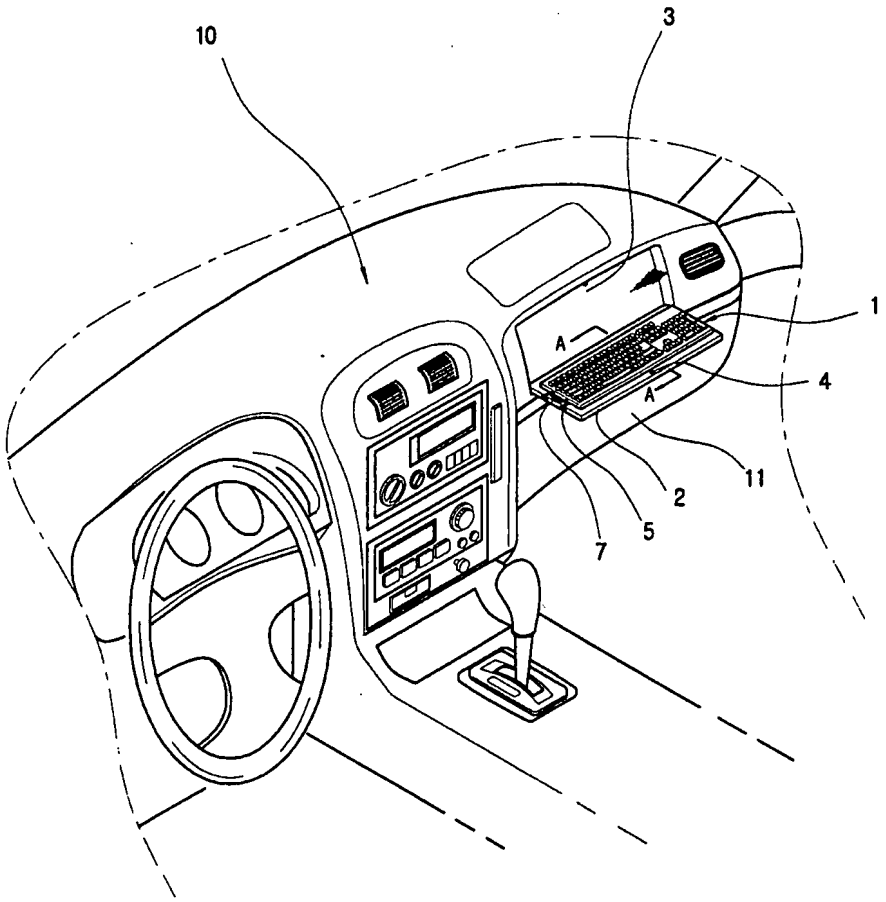


FIG. 3

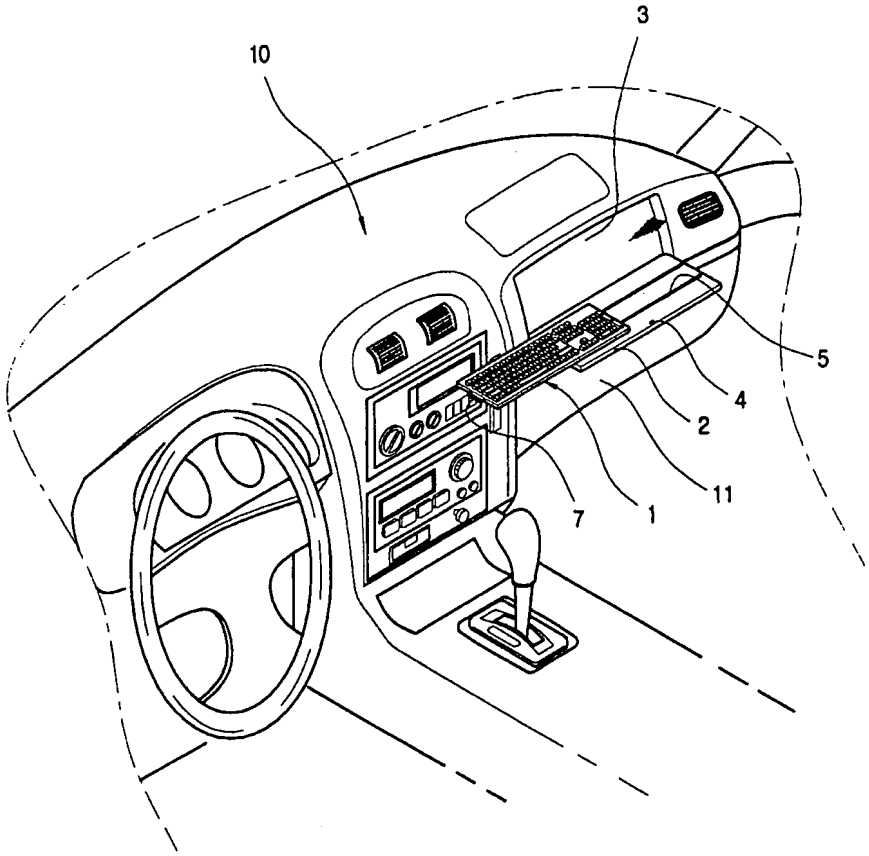
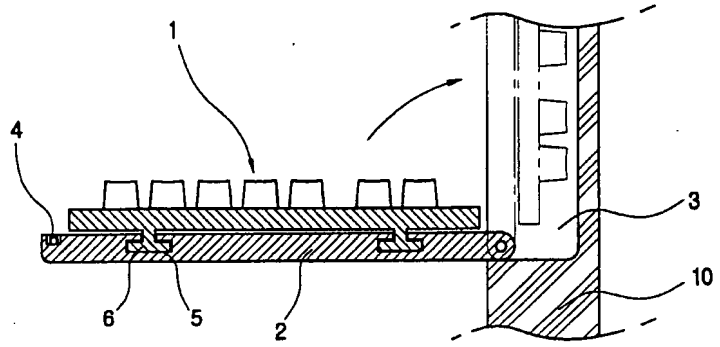


FIG.4



INTERNATIONAL SEARCH REPORT

International application No.
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CLASSIFICATION OF SUBJECT MATTER

IPC[7]: B 60 R 11/02; B 60 K 37/04; B 60 K 37/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[7]: B 60 R; B 60 K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 4109497 C1 (MERCEDES-BENZ AKTIENGESELLSCHAFT) 13 August 1992 (13.08.92) fig.1.	1
Y	DE 4128663 A1 (VDO ADOLF SCHINDLING AG) 17 December 1992 (17.12.92) claim 5.	1
A	EP 0769406 A1 (REGIE NATIONALE DES USINES RENAULT S.A.) 23 April 1997 (23.04.97) fig.1.	1
A	DE 3408728 A1 (SIEMENS AG) 19 September 1985 (19.09.85) fig.1.	1

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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„&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
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